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ABSTRACT

This report presents a study undertaken to evaluate the effectiveness of contacting previously unreached urban audiences through the use of films at automatic self-learning centers. To accomplish this, the study attempted to determine: (1) the extent to which people in an urban business (a large insurance company) would look at agricultural films during their lunch hour; (2) their reaction to this approach; and (3) the extent to which they would learn from this informal self-learning setting. Subjects were randomly chosen for both pre- and post-test phases of the study. From the results, the following recommendations are proposed: (1) More attention and emphasis should be given to publicizing the film to be shown in terms of its content, sponsor, and length; (2) The study should be replicated in other urban settings using the same subject population for both pre- and post-testing to determine changes in knowledge levels; (3) Films should be made available three to five days in succession and shown in more than one area; (4) Additional super film cassettes should be developed; (5) A guide should be developed for viewers to follow as the film is being shown; (6) Additional sources of information on the film's subject should be posted; (7) The potential viewing group's characteristics should be determined to select films; and (8) other new media types should be considered. (JS)

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RESEARCH SERIES IN AGRICULTURAL EDUCATION

A Research Report of a Graduate Study

Issued by

The Department of Agricultural Education
College of Agriculture and Home Economics
The Ohio State University
Columbus, Ohio 43210

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RESEARCH SERIES IN AGRICULTURAL EDUCATION

A Research Report

of a

Ph. D. Dissertation

AN EVALUATION OF SELF-LEARNING CENTERS IN ADULT EDUCATION

By

Charles W. Lifer, Robert W. McCormick
and Clarence J. Cunningham

Issued by

The Department of Agricultural Education

College of Agriculture and Home Economics

The Ohio State University

Columbus, Ohio 43210

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FOREWORD

Considerable interest has been shown in the auto-instructional approach during the past few years. Recent technological advances, more leisure time and more interest in furthering one's educational experience have contributed to this increased interest.

This study, conducted as a Ph.D. dissertation by Charles W. Lifer, had as its major purpose the identification and interest of urban business clientele in viewing selected films at work during their lunch hour. Further, this study assessed the interests in additional subject matter films if available for viewing. This research study is an interest study and is concerned with a clientele group and type of learning approach where practically no research has been done to date.

Implications made in this study provide a framework for conducting future research studies.

Robert W. McCormick
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CONCLUSIONS

The following conclusions were based upon the interpretation of the findings in this study:

1. The use of self-learning centers in urban businesses requires concentrated publicity to attract a substantial viewing audience.

2. Adults in informal settings will watch films during their lunch hour if they are made aware of the topic, date, and time of showing in advance.

3. Given a choice of selected agricultural and home economics films, women in urban businesses prefer to watch home economics films, while men prefer viewing films relating to "Lawn Practices," "Controlling Lawn and Garden Insects," and "Lawn Mower Safety."

4. There was no evidence that adults had a significant gain in knowledge from viewing the films used in this study in the setting used.

5. Adults employed in urban businesses prefer to view films during their lunch hour rather than before or after work.

6. Adults employed in urban businesses prefer that films be available for their viewing for one week in duration for optimal viewing opportunities.

7. Adults working in large urban business settings prefer films which are six to ten minutes in length, while adults employed in smaller more suburban business settings prefer films which are eleven to fifteen minutes in length.

8. Adult urban business audiences are not familiar with the Ohio Cooperative Extension Service.

PROBLEM STATEMENT

The study was concerned with evaluating the effectiveness of contacting previously unreached urban audiences through the use of 8mm Automatic Self-learning Centers.

PURPOSE OF THE STUDY

The primary purpose of this study was to determine the extent to which people in an urban business would look at agricultural films during their lunch hour; ascertain their reaction to the approach; and to determine the extent to which they would learn from this informal self-learning setting.

SPECIFIC OBJECTIVES

To accomplish the stated purposes, the following specific objectives were set forth:

1. To identify and describe the characteristics and background of selected business clientele and identify their interest in receiving agricultural and home economics information.

2. To compare the interest of business clientele in subject matter films by sex, age, and type of position held.

3. To determine the time of day, length of film, and the number of days that urban business audiences would prefer to view films.

4. To determine differences between the experimental and control groups relative to changes in knowledge on the barbecue subject matter questions.

5. To determine differences between the experimental and control groups relative to changes in knowledge on the landscape subject matter questions.

6. To formulate recommendations for changes needed in the informal self-learning approach to make the approach more effective in the future regarding the following items:

A. Length of films
B. Subject matter desired
C. Length of time film available
D. Time of day most appropriate

7. To formulate recommendations based on this study for improving future research studies.

STATEMENT OF THE HYPOTHESES

The hypotheses developed for this study were based on the objectives of the study, a review of related literature, and personal consultations with members of the Ohio State University Teaching, Research, and Extension staff. The research and null hypotheses were stated as follows:

1. Research Hypothesis (H_1) -- The experimental group will show a greater increase in barbecue knowledge than the control group.
   Null Hypothesis (H_0) -- There was no significant difference between the experimental and control groups as shown by pre-test and post-test gain scores.
2. Research Hypothesis (H_2) -- The experimental group will show a greater increase in landscape knowledge than the control group.
   Null Hypothesis (H_0) -- There was no significant difference between the experimental and control groups as shown by pre-test and post-test gain scores.
3. Research Hypothesis (H_3) -- Women will prefer to watch some home economics films, while men will not.
   Null Hypothesis (H_0) -- There was no difference by sex regarding the type of subject matter films the respondents prefer to watch.

4. Research Hypothesis (H_4) -- Those in the experimental group seeing the barbecue film will show a greater increase in barbecue knowledge than those not seeing the film.

   Null Hypothesis (H_0) -- There was no significant difference in mean scores of those seeing the barbecue film and those not seeing it.

5. Research Hypothesis (H_5) -- Those in the experimental group seeing the landscape film will show a greater increase in landscape knowledge than those not seeing the film.

   Null Hypothesis (H_0) -- There was no significant difference in mean scores between those seeing the landscape film and those not seeing the landscape film.

6. Research Hypothesis (H_6) -- There will be a difference by sex in regard to the length of films most preferred by respondents.

   Null Hypothesis (H_0) -- There was no significant difference in preference on length of films preferred by men and women respondents.

7. Research Hypothesis (H_7) -- Respondents will prefer to view films during their lunch hour rather than before or after work.

   Null Hypothesis (H_0) -- There was no significant difference in preference by respondents on the time of day most desired for viewing films.

PROCEDURES EMPLOYED IN THE STUDY

The Design:

The design of this study involved sampling decisions, location of the research study, selection of test films, the selection of equipment, and construction of specific data instruments designed to achieve the objectives listed above and to test the hypotheses as formulated.

The general procedures used in this study included the design Campbell and Stanley referred to as the Non-Equivalent Control Group Design (No. 10). This design involved an experimental group and a control group both given a pre-test and a post-test, but in which the control group and the experimental group did not have pre-experimental sampling equivalence. This design is shown as follows:

$$\begin{array}{ccc} O_1 & X & O_3 \\ \hline O_2 & & O_4 \end{array}$$

O_1 O_2 - Pre-rating or pre-test of respondents in the experimental and control groups by understanding of barbecue and landscape information. O_3 O_4 - Post-rating or post-test of respondents in the experimental and control groups by level of understanding of the barbecue and landscape information. X - Treatment (8mm film cartridges) available for viewing at the experimental location.

It should be noted that the assignment of X to one group or the other was not done in a random manner in this study, but was determined by the investigator and his advisers. The similarity of the two groups (experimental and control) is desirable and increases the effectiveness of the study as indicated by Campbell and Stanley.

The Nationwide Insurance Company's National Home Office was chosen to be the experimental group for the study and the Nationwide Insurance Regional Office was selected to be the control group. These offices, according to the Nationwide Insurance Company Personnel Director, employs persons with similar qualifications, thus making the two groups similar in characteristics. The two offices were located at different locations in Columbus, Ohio thus preventing the likelihood of interaction of the two groups during the conduct of the study.

Equipment Used:

The Technicolor Super 8mm automatic cartridge projector and two films entitled, "Let's Barbecue Chicken" and "New Guidelines for the Well Landscaped Home" were set up in the lounge area located adjacent to the cafeteria of the home office of the Nationwide Insurance Company.

Source of Data:

A random sample of 176 was selected from the home office of Nationwide Insurance Company and a random sample of 48 was selected from the regional office in September, 1968 for the pre-test. The procedure used in drawing these samples was to select every sixth person leaving the cafeteria at the home and regional offices of Nationwide Insurance Company. This one in six sampling procedure was also used in October in drawing two additional random samples for the post-tests for the experimental and control groups.

Data Collection Instruments:

There were basically two different questionnaires used in the study; that being the pre-test and the post-test. The pre-test which was identical for both the experimental and control groups consisted of two parts; namely: (1) background information of the respondents, and (2) barbecue and landscape subject matter questions. The post-test included the above two sections plus a third section pertaining to methods and additional potential subject matter film possibilities.

The background section of the instrument was developed through conferences with the author's adviser, committee members, other knowledgeable people regarding the research study, and from the literature.

The barbecue and landscape subject matter questions were developed through viewing the subject matter films, discussions in a research seminar, and through counsel with the author's adviser and committee members.

The methods section of the post-test was developed through a review of the literature and counsel from several knowledgeable people in the field.

The instrument for both the pre-test and the post-test were developed to provide the information required to reach the specific objectives of the study. A critical review of the subject matter films, a review of the literature, and consultation with three professors in Agricultural Education at The Ohio State University and the Personnel Director of the Nationwide Insurance Company were pre-requisites to the development of the instrument.

The instrument was mimeographed and pre-tested for clarity and understanding with graduate students in Agricultural Education and with the clerical staff in the College of Agriculture and Home Economics at The Ohio State University.

Contacts were made with authorities in the new media field at The Ohio State University in the Department of Photography, the College of Education, the Visual Aids Laboratory, the Arlington Camera Center, and the writer's adviser and one additional member of his committee as a means of determining the kinds of information which would be helpful in this study and in planning for future studies.

Sampling Procedures:

The sampling procedures included the following steps:

1. Questionnaires were given to every sixth person going through the cafeteria line at the main office of the Nationwide Insurance Company (experimental group). This pre-test was completed by the employees in the sample and returned through the inter-office mail.

2. The post-test for the experimental group was done in a similar manner and was given to every sixth person going through the cafeteria line.

3. The pre-test at the control group location (regional office) was administered in a manner similar to the experimental group and the questionnaire was also given to every sixth person going through the cafeteria line.

4. The post-test at the control location was also given to every sixth person going through the cafeteria line.

Pre-Test, Treatment, and Post-Test:

The pre-test was administered at the experimental and control locations on September 16 and September 20, 1968, respectively. The barbecue film was shown at the experimental location (the main office) on September 18 and October 8, 1968. The landscape film was shown at the experimental location on September 19 and October 7, 1968. The post-test was administered at each of the locations (experimental and control) on October 9 and October 11, 1968, respectively. This is shown diagramatically as follows:

	Pre-Test	Films Shown (Treatment)	Post-Test
		B.B.Q. 9/18 10/8	
		Lands. 9/19 10/7	
Experimental Group (Main Office)	Sept. 16		Oct. 9
	0	x	0
	0		0
Control Group (Regional Office)	Sept. 20		Oct. 11

Analysis of Data:

The data collected from the respondents were coded and punched on data processing cards. The 360 and 7094 computers were used for analyzing the major part of the data. Descriptive and inferential statistics were used for statistical analysis of this study. More specifically, frequency distributions, percentages, means, chi square, and "t" tests were used in the analysis of the data.

The significance level established for this study was the .05 level. This was the level at which the decision about the acceptance or rejection of the null hypothesis was made. If the observed value was equal to or less than .05, the null hypothesis was rejected in favor of the alternative research hypothesis.

FINDINGS OF THE STUDY

The findings of the research study as they relate to the stated hypotheses are stated in this section. Also, the findings which are not directly related to the stated hypotheses, but pertinent to the study are given.

Statement of the Hypotheses and Decisions on Whether or Not to Reject:

1. Research Hypothesis (H_1) -- The experimental group will show a greater increase in barbecue knowledge than the control group.

Null Hypothesis (H_0) -- There was no significant difference between the experimental and control groups as shown by pre-test and post-test gain scores.

The results of the study failed to reject the null hypothesis as stated since the difference between the mean scores were not significant at the .05 level of confidence. By failing to reject the null hypothesis, the researcher is saying that any difference occurring between the two groups was due to chance alone and was not due to the treatment.

3. Research Hypothesis (H_2) -- The experimental group will show a greater increase in landscape knowledge than the control group.

Null Hypothesis (H_0) -- There was no significant difference between the experimental and control groups as shown by pre-test and post-test gain scores.

The results of the study failed to reject the null hypothesis as stated since the difference between the mean scores was not significant at the .05 level of confidence.

4. Research Hypothesis (H_3) -- Women will prefer to watch home economics films, while men will not.

Null Hypothesis (H_0) -- There was no significant difference by sex regarding the type of subject matter films the respondents prefer to watch.

The null hypothesis was rejected. The obtained results clearly indicated that women prefer to view home economics films, while men respondents preferred subjects regarding lawn practices, controlling garden lawn insects, and lawn mower safety.

2. Research Hypothesis (H_4) -- Those in the experimental group seeing the barbecue film will show a greater increase in barbecue knowledge than those not seeing the film.

Null Hypothesis (H_0) -- There was no significant difference in mean scores of those seeing the barbecue film and those not seeing it.

The results of the study failed to reject the null hypothesis as stated since the difference between the mean scores was not significant at the .05 level of confidence. There was a positive gain in scores which would suggest that a change in learning may have occurred.

5. Research Hypothesis (H_5) -- Those in the experimental group seeing the landscape film will show a greater increase in landscape knowledge than those not seeing the film.

Null Hypothesis (H_0) -- There was no significant difference in mean scores between those seeing the landscape film and those not seeing it.

The results of the study failed to reject the null hypothesis as stated. There was no difference in scores of those seeing the landscape film and those not seeing it.

6. Research Hypothesis (H_6) -- There will be a difference by sex in regard to the length of film preferred by respondents.

Null Hypothesis (H_0) -- There was no significant difference on length of film preferred by men and women respondents.

The results of the study indicated that men respondents preferred to view longer films than women respondents, thus rejecting the null hypothesis as stated.

7. Research Hypothesis (H_7) -- Respondents will prefer to view films during their lunch hour rather than before or after work.

Null Hypothesis (H_0) -- There was no significant difference in preference by respondents on the time of day most desired for viewing films.

The results of the study indicated that there was a difference in the time of day most preferred to view films. A majority of the respondents preferred to view films during their lunch hour, thus the results rejected the null hypothesis and the alternative research hypothesis was accepted.

Other Research Findings Not Directly Related to the Stated Hypotheses:

The following research findings were important and useful even though they were not related directly to the hypotheses.

1. There was no significant difference between the ratio of men to women of participants in the experimental and control groups, which leads to the interpretation that the participants in the experimental and control groups were similar.

2. Approximately two-thirds of all respondents in the study were buying or owned their home.

3. Approximately two-thirds of all respondents in the study were females.

4. Approximately one-third of all respondents in the study were forty years of age or older and another one-third were in the 20-29 years of age grouping.

5. Approximately one-half of all respondents in the study had completed a high school education with no additional formal education pursued.

6. Nearly one-half of all respondents in the study had attended or completed business, trade, vocational, college, or other post-high school training.

7. Approximately one-third of all the respondents in the study were in management positions with the remaining two-thirds being in clerical type positions.

8. Over one-half of all the respondents in the experimental and control groups had not previously heard of the Cooperative Extension Service.

9. Approximately three-fourths of all the respondents in the experimental and control groups did not know if there was a Cooperative Extension Office in Franklin County.

10. Approximately ten per cent of the respondents in the experimental group on the post-test saw the landscape film.

11. Approximately ten per cent of the respondents in the experimental group on the post-test saw the barbecue film.

12. Over forty per cent of the respondents in the experimental group on the post-test who did not see the films indicated that they were not aware that the films were available.

13. Approximately one-fifth of the respondents in the experimental group on the post-test who did not see the films indicated that they were not interested in the subject matter.

14. Over three-fourths of all the respondents in the study on the post-test indicated that they would prefer to view films during their lunch hour.

15. Over one-half of all the respondents in the study on the post-test preferred that films be available for viewing one to three days, while an additional one-third of the respondents preferred that films be available for viewing four to six days.

16. Respondents in the experimental post-test group preferred films which were six to ten minutes in length, while respondents in the control group preferred the eleven to fifteen minute length films.

17. Over three-fourths of all respondents in the study on the post-test were favorable to films that were six to fifteen minutes in length.

18. The types of films preferred by all the respondents in the study on the post-test were in the following order of preference: "selection of clothing," "selection and preparation of easy meals," "arranging furniture to fit," and "outdoor recreation opportunities."

19. The selection of films preferred for viewing by the respondents in the experimental post-test group depended largely on the sex of the respondents. The home economics subject matter films were preferred most by the women, while the men preferred films on "lawn practices," "lawn mower safety," and "controlling garden and lawn insects."

20. The management respondents in the experimental post-test group preferred viewing films on "lawn practices," "controlling garden and lawn insects," and "outdoor recreation opportunities."

21. Respondents in the experimental post-test group under twenty years of age preferred to view films on "guides to good eating" and "clothing colors for you," while the respondents in the 20-29 age grouping preferred "outdoor recreation opportunities." "Can you afford credit" and "outdoor recreation opportunities" rated higher over-all by all age groupings than any other subject matter category.

22. Home owners in the experimental group preferred to watch films on "lawn practices," "children behavior," and "outdoor recreation opportunities," while renters preferred "selection and preparation of easy meals," "selection of clothing," and "arranging furniture to fit" to be more important.

23. Over one-half of all the respondents in the study on the post-test indicated that they would view the following films, if available:

1. Selection of clothing
2. Selection and preparation of easy meals
3. Arranging furniture to fit
4. Outdoor recreation opportunities
5. Clothing colors for you
6. Children's behavior
7. A look at food costs
8. Guides to good eating
9. Care of your small appliances
10. Selecting plants for home beautification

24. Over sixty per cent of the women respondents in the experimental post-test group indicated that they would view the following films, if available:

1. Selection of clothing
2. Selection and preparation of easy meals
3. Arranging furniture to fit
4. Clothing colors for you
5. Guides to good eating
6. Can you afford credit
7. Outdoor recreation opportunities
8. Children's behavior
9. A look at food costs

25. Over sixty per cent of the men respondents in the experimental post-test group indicated that they would view the following films, if available:

1. Lawn practices
2. Outdoor recreation opportunities

26. Over sixty per cent of those in clerical positions in the experimental post-test group indicated that they would watch the following films, if available:

1. Selection and preparation of easy meals
2. Selection of clothing
3. Arranging furniture to fit
4. Clothing colors for you
5. Guides to good eating
6. Outdoor recreation opportunities
7. Can you afford credit
8. Children's behavior
9. A look at food costs

27. Over sixty per cent of the respondents in management positions in the experimental post-test group indicated that they would view the following film, if available:

Lawn practices

28. Over sixty per cent of the respondents in the experimental post-test group under 20 years of age indicated that they would view the following films, if available:

1. Clothing colors for you
2. Arranging furniture to fit
3. Selecting and preparing easy meals
4. Selection of clothing
5. Guides to good eating
6. Preparation for marriage
7. Outdoor recreation opportunities
8. Can you afford credit
9. Children's behavior

29. Over sixty per cent of the respondents 20-29 years of age in the experimental post-test group indicated that they would view the following films, if available:

1. Selection of clothing
2. Selection and preparation of easy meals
3. Arranging furniture to fit
4. Clothing colors for you
5. Outdoor recreation opportunities
6. A look at food costs
7. Children's behavior

30. Over sixty per cent of the respondents 30-39 years of age in the experimental post-test group indicated that they would view the following films, if available:

1. Children's behavior
2. Lawn practices

31. Over sixty per cent of the respondents 40 years or over in the experimental post-test group indicated that they would watch the following films, if available:

1. A look at food costs
2. Selection of clothing
3. Care of small appliances

32. Over sixty per cent of the respondents in the experimental post-test group who owned or were buying their home indicated they would watch the following film, if available:

Children's behavior

33. Over sixty per cent of the respondents in the experimental post-test group who were renting their homes indicated that they would watch the following films, if available:

1. Selection and preparation of easy meals
2. Selection of clothing
3. Arranging furniture to fit
4. Clothing colors for you
5. Outdoor recreation opportunities
6. Guides to good eating

RECOMMENDATIONS

The following recommendations are made based upon the research data, a study of the related research, and the judgment and experience of the writer:

1. More attention and emphasis should be given in causing potential audiences to be aware of the film to be shown, its content, sponsor, and length. Working through the company activities division would seem to

further improve the awareness of the films by the prospective viewer. Use of the company news bulletin, bulletinboards, posters, memos, and listed activities schedule are a few of the possible approaches which should be used if possible.

2. The study should be replicated in additional urban settings using a design where pre-test and post-test scores can be received for the same individuals as a means of determining changes in knowledge levels.

3. Films should be made available to the potential audience three to five days in succession and also in the activities area if possible in addition to the lounge area.

4. These findings should be used in selecting and developing additional super 8mm film cassettes appropriate to the intended clientele to be reached.

5. A one-page guide should be developed and provided for viewers to follow as the film is being shown as a means of making additional notes for follow-up reference and use.

6. A bulletinboard showing a listing and sample of the additional sources of information and scheduled meetings where additional material on the subject may be obtained should be in conjunction with the self-learning centers.

7. An attempt should be made to determine the breakdown of the potential group characteristics by sex, type of position, size of business, and opportunities for viewing films prior to selecting the films.

8. Consideration should be given to uses of additional types of new media devices which provide simplicity of operation, maximum flexibility in revision of subject matter content, ease and speed of developing the program, and efficiency of time and finances in securing, operating, and conducting the research program.

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